

WHAT IS CLAIMED IS:

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1. An active alumina catalyst comprising a cocatalytically effective amount of sodium values, said effective amount, expressed by weight of Na_2O , ranging from 1,200 ppm to 2,700 ppm.

2. The active alumina catalyst as defined by Claim 1, said effective amount, expressed by weight of Na_2O , ranging from 1,500 ppm to 2,500 ppm.

3. The active alumina catalyst as defined by Claim 2, said effective amount, expressed by weight of Na_2O , ranging from 1,700 ppm to 2,200 ppm.

4. The active alumina catalyst as defined by Claim 1, further comprising silica and/or at least one oxide of titanium, zirconium, cerium, tin, a rare earth, molybdenum, cobalt, nickel or iron.

5. The active alumina catalyst as defined by Claim 1, further comprising a clay, a silicate, an alkaline earth metal or ammonium sulfate, ceramic fibers, asbestos fibers, or combination thereof.

6. The active alumina catalyst as defined by Claim 1, further comprising cellulose, carboxymethyl cellulose, carboxyethyl cellulose, tallol, a xanthan gum, a surface-active agent, a flocculating agent, a polyacrylamide, carbon black, a starch, stearic acid, polyacrylic alcohol, polyvinyl alcohol, a biopolymer, glucose, a polyethylene glycol, or combination thereof.

7. The active alumina catalyst as defined by Claim 1, comprising extrudates, tablets, or beads thereof.

5 8. The active alumina catalyst as defined by Claim 7, comprising a plurality of beads having a diameter size ranging from 1.5 mm to 10 mm.

9. The active alumina catalyst as defined by Claim 8, said beads having a diameter size ranging from 3 mm to 7 mm.

10 10. The active alumina catalyst as defined by Claim 1, deposited onto support substrate therefor.

11. A catalyst comprising at least 0.5% by weight of the active alumina catalyst as defined by Claim 1.

15 12. A catalyst comprising from 60% to 99% by weight of the active alumina catalyst as defined by Claim 1.

20 13. In a catalyzed Claus reaction for the production of elemental sulfur, the improvement which comprises, as the catalyst therefor, the active alumina catalyst as defined by Claim 1.

25 14. In a process for the catalyzed hydrolysis of an organosulfur compound, the improvement which comprises, as the catalyst therefor, the active alumina catalyst as defined by Claim 1.

15. In a process for catalytically removing objectionable sulfur compounds from gaseous effluents comprised thereof, the improvement which comprises, as the catalyst therefor, the active alumina catalyst as
5 defined by Claim 1.

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